

## CLAIMS

What is claimed is:

1. A method for evaluating operation of an alternator comprising:  
detecting a frequency component of an alternator output signal;  
comparing the frequency component of the alternator output signal with a threshold frequency; and  
evaluating operation of the alternator based on a result of the comparing step.
2. The method of claim 1, further comprising a step of maintaining the rotational speed of the alternator at a predetermined level before detecting the frequency component of the alternator output signal.
3. The method of claim 1, wherein if the frequency component is smaller than the threshold frequency, the alternator is determined as defective.
4. A system for evaluating the operation of an alternator comprising:  
a terminal for receiving an alternator output signal representative of an output of the alternator;  
a frequency detection device for detecting a frequency component of the alternator output signal;  
a controller for comparing the frequency component of the alternator output signal to a threshold frequency, and generating an indication signal based a result of the comparison; and  
an indication device responsive to the content of the indication signal for indicating the operation of the alternator.
5. The system of claim 4, wherein the frequency detection device comprises:  
a threshold device for generating a reference threshold; and

a comparator for comparing the level of the alternator output signal with the reference threshold and generating a frequency signal indicating the frequency component of the alternator output signal based on the comparison result;  
wherein the frequency signal is coupled to the controller.

6. The system of claim 5, wherein the reference threshold is generated based on the level of the alternator output signal according to a predetermined rule.
7. The system of claim 6, wherein the reference threshold is a value between a peak signal level and a valley signal level of the alternator output signal.
8. The system of claim 6, wherein the reference threshold is the average of the peak level and valley level of the alternator output signal.
9. The system of claim 4, wherein the alternator output signal is the current or voltage generated by the alternator.
10. The system of claim 4, wherein the alternator is installed in an automotive vehicle and driven by the engine of the automotive vehicle.
11. The system of claim 10, further comprising a database, accessible by the controller, including threshold frequencies corresponding to more than one vehicle model.
12. The system of claim 10, further comprising a database, accessible by the controller, including threshold frequencies corresponding to more than one engine rotational speed.
13. The system of claim 10, wherein the alternator output signal is received from a vehicle computer installed on the automotive vehicle.
14. The system of claim 4, further comprising a database, accessible by the controller, including threshold frequencies corresponding to more than one alternator rotational speed.

15. The system of claim 4, wherein the alternator output signal is received from a data processing system.

16. A system for evaluating the operation of an alternator comprising:  
a terminal for receiving an alternator output signal representative of an output of the alternator;  
an adaptive threshold device for generating a reference threshold based on the level of the alternator output signal according to a predetermined rule;  
a comparator for comparing the level of the alternator output signal with the reference threshold and generating a frequency signal indicating the frequency component of the alternator output signal based on the comparison result;  
a controller for comparing the frequency component of the alternator output signal with a threshold frequency, and generating an indication signal representative of the operation of the alternator based on the comparison result of the frequency component and the threshold frequency; and  
an indication device responsive to the content of the indication signal for indicating the operation of the alternator.

17. The system of claim 16, wherein the reference threshold is the average of the peak level and valley level of the alternator output signal.

18. A system for evaluating the operation of an alternator comprising:  
means for receiving an alternator output signal representative of an output of the alternator;  
means for detecting a frequency component of the alternator output signal;  
means for comparing the frequency component of the alternator output signal to a threshold frequency;  
means for generating an indication signal based the comparison result; and  
an indication device responsive to the content of the indication signal for indicating the operation of the alternator.

19. The system of claim 18, wherein means for detecting a frequency component of the alternator output signal comprises:
- means for generating a reference threshold; and
- means for comparing the level of the alternator output signal with the reference threshold
- and generating a frequency signal indicating the frequency component of the alternator output signal based on the comparison result;
- wherein the frequency signal is coupled to the controller.
20. The system of claim 19, wherein the reference threshold is generated based on the level of the alternator output signal according to a predetermined rule.
21. The system of claim 20, wherein the reference threshold is a value between a peak signal level and a valley signal level of the alternator output signal.
22. The system of claim 21, wherein the reference threshold is the average of the peak level and valley level of the alternator output signal.